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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/944,083

08/31/2001

Steven M. Lefkowitz

10010381-1

1180

7590

02/28/2005

Gordon Stewart  
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EXAMINER

TRAN, MY CHAU T

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

09/944,083

Applicant(s)

LEFKOWITZ ET AL.

Examiner

MY-CHAU T TRAN

Art Unit

1639

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 01 February 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☒ The reply was filed after the date of filing a Notice of Appeal, but prior to the date of filing an appeal brief. The Notice of Appeal was filed on 01 February 2005. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the <sup>RESPONSE</sup> ~~proposed amendment~~ (s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: None.  
Claim(s) objected to: None.  
Claim(s) rejected: 7-26, and 44-51 (for reasons of records).  
Claim(s) withdrawn from consideration: None.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.

  
PADMASHRI PONNALURI  
PRIMARY EXAMINER

***ADVISORY ACTION (CONT.)***

1. Applicant's response filed 2/01/2005 under 37 CFR 1.116 in reply to the final rejection has been considered but is not deemed to place the application in condition for allowance because applicant's arguments for the prior art rejections were considered but are deemed nonpersuasive for the following reasons:
2. Applicant's argument directed to the rejection under 35 USC 103(a) as being unpatentable over Wang et al. (US Patent 5,922,617; *filing date 11/12/1997*) and Bensimon et al. (US Patent 5,846,724; *filing date 01/28/1997*) for claims 7-26, and 44-51 was considered but they are not persuasive for the following reasons.

Applicant contends that the method combination of Wang et al. and Bensimon et al. is not obvious over the presently claimed method because neither Wang et al. nor Bensimon et al. teaches the presently claimed step of "*converting said olefin functional groups to ligand reactive functional groups that produce covalent bonds with said at least two different polymer ligands upon contact with said ligands*". Thus, the method combination of Wang et al. and Bensimon et al. is not obvious over the presently claimed method.

Applicant's arguments are not convincing because the method combination of Wang et al. and Bensimon et al. is obvious over the presently claimed method.

First, the passages in Bensimon et al. recounted by applicant does not match with the passages that the examiner relate to, i.e. col. 4, lines 15-18, and col. 7, lines 26-32. Col. 4, lines 15-18 in Bensimon et al. to which the examiner refer to states:

***"They are capable of directly anchoring molecules of biological interest (DNA, RNA, PNA, proteins, lipids, saccharides) under certain conditions of pH or ionic content of the medium."***

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Col. 7, lines 26-32 in Bensimon et al. to which the examiner refer to states:

***“Within the framework of the present invention, it has been demonstrated that these surfaces have a reactivity which is highly pH-dependent. This characteristic makes it possible to anchor the nucleic acids or the proteins, especially by their end(s), using a determined pH region and often with a reaction rate which can be controlled by the pH.”***

The passages in Bensimon et al. recounted by applicant are as follows:

A) ***“In the second case, the highly specific surface for biological reactions according to the present invention contains: on a support, a substantially monomolecular and compact layer of an organic compound of elongated structure having at least: an attachment group having affinity for the support, and an exposed group containing an ethylenic double bond, having little or no affinity for the said support and the said attachment group under the attachment conditions, but having affinity for one type of biological molecule.”***

This passage is found in col. 4, lines 55-65.

B) ***“The present invention also relates to the surfaces obtained using the processes according to the present invention and all processes using this type of surface, whether they are processes permitting the detection and/or the quantification of biological molecules, but also the separation of certain biological molecules, especially a sample using antigen/antibody and/or DNA, DNA/RNA coupling techniques. The present invention also relates to processes for preparing highly specific surfaces for biological reactions as described above for the production of layers according to (A) and (B) and, in particular, the process characterized in that:”***

This passage is found in col. 7, line 66 to col. 8, line 10.

Thus, these passages are *not* the passages that the examiner refers to. Furthermore, applicant recites the passage of col. 7, lines 22 to 32 (see pg 9 of response) that include the passage that the examiner allude to, i.e. col. 7, lines 26-32. Additionally, the passage in Bensimon et al. that applicant recited, i.e. ***“These highly specific surfaces for biological reactions, contain a support having at the surface groups with a double bond, especially vinyl (-CH=CH<sub>2</sub>, hereinafter C=C surfaces) which are accessible to the solution. They are capable of directly anchoring molecules of biological interest (DNA, RNA, PNA, proteins, lipids, saccharides) under certain conditions of pH or ionic content of the medium. In particular, these surfaces do not require specific chemical modification either of the surface or of the biological molecules to be anchored. There are no documents mentioning such a use of a surface with vinyl groups.”*** is not found in col. 3, lines

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40 to 50 as indicated by applicant but rather it is found in col. 4, lines 12-22. Therefore, it is unclear as to applicant's assertion that the examiner misread the teaching of Bensimon et al. when applicant recited passages that do not match with the passages that the examiner related to, i.e. col. 4, lines 15-18, and col. 7, lines 26-32.

Second, the presently claimed step of “*converting said olefin functional groups to ligand reactive functional groups that produce covalent bonds with said at least two different polymer ligands upon contact with said ligands*” of claim 7 does not impart any structural characteristic of an “intermediate” moiety but rather a functional characteristic of the claimed olefin functional group, i.e. a “*ligand reactive functional groups that produce covalent bonds with*” the ligand. Thus, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., an “intermediate” moiety) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Third, Bensimon et al. do teach the presently claimed converting step. Bensimon et al. disclose the step of controlling the reactivity of the C=C surface by pH or ionic contents, i.e. “*converting said olefin functional groups to ligand reactive functional groups*”, to directly anchor the biological interest such as DNA, i.e. to “*produce covalent bonds*” (see col. 4, lines 15-18, and col. 7, lines 26-32). Thus, Bensimon et al. do teach the presently claimed converting step.

Fourth, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or

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modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the teaching of Wang et al. and Bensimon et al. is found in the reference of Bensimon et al., i.e. for the advantage of providing a surface having a reactivity that is highly pH-dependent (Bensimon: col. 6, lines 50-56). Second, there is expectation of success of the combination since the method of Bensimon et al. disclose the success of the anchoring the biological interest such as DNA on a double bond surface (see col. 14, line 8 to col. 15, line 22). Thus, there is a motivation to combine the teaching of Wang et al. and Bensimon et al.

Therefore, the method combination of Wang et al. and Bensimon et al. is obvious over the presently claimed method, and the rejection is maintained.

3. Applicant's argument directed to the rejection under 35 USC 103(a) as being unpatentable over Pirrung et al. (US Patent 5,143,854) and Bensimon et al. (US Patent 5,677,126; filing date 02/10/1995) for claims 7-26 and 44-51 was considered but they are not persuasive for the following reasons.

Applicant alleges that the method combination of Pirrung et al. and Bensimon et al. is not obvious over the presently claimed method because neither Pirrung et al. nor Bensimon et al. teaches the presently claimed step of “*converting said olefin functional groups to ligand reactive functional groups that produce covalent bonds with said at least two different polymer ligands*”

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*upon contact with said ligands*". Thus, the method combination of Pirrung et al. and Bensimon et al. is not obvious over the presently claimed method.

Applicant's arguments are not convincing since the method combination of Pirrung et al. and Bensimon et al. is obvious over the presently claimed method.

First, the passages in Bensimon et al. recounted by applicant does not match with the passages that the examiner relate to, i.e. col. 4, lines 15-18, and col. 7, lines 26-32. Col. 4, lines 15-18 in Bensimon et al. to which the examiner refer to states:

***"They are capable of directly anchoring molecules of biological interest (DNA, RNA, PNA, proteins, lipids, saccharides) under certain conditions of pH or ionic content of the medium."***

Col. 7, lines 26-32 in Bensimon et al. to which the examiner refer to states:

***"Within the framework of the present invention, it has been demonstrated that these surfaces have a reactivity which is highly pH-dependent. This characteristic makes it possible to anchor the nucleic acids or the proteins, especially by their end(s), using a determined pH region and often with a reaction rate which can be controlled by the pH."***

The passages in Bensimon et al. recounted by applicant are as follows:

A) ***"In the second case, the highly specific surface for biological reactions according to the present invention contains: on a support, a substantially monomolecular and compact layer of an organic compound of elongated structure having at least: an attachment group having affinity for the support, and an exposed group containing an ethylenic double bond, having little or no affinity for the said support and the said attachment group under the attachment conditions, but having affinity for one type of biological molecule."***

This passage is found in col. 4, lines 55-65.

B) ***"The present invention also relates to the surfaces obtained using the processes according to the present invention and all processes using this type of surface, whether they are processes permitting the detection and/or the quantification of biological molecules, but also the separation of certain biological molecules, especially a sample using antigen/antibody and/or DNA, DNA/RNA coupling techniques. The present invention also relates to processes for preparing highly specific surfaces for biological"***

***reactions as described above for the production of layers according to (A) and (B) and, in particular, the process characterized in that:***

This passage is found in col. 7, line 66 to col. 8, line 10.

Thus, these passages are ***not*** the passages that the examiner refers to. Furthermore, applicant recites the passage of col. 7, lines 22 to 32 (see pg 9 of response) that include the passage that the examiner allude to, i.e. col. 7, lines 26-32. Additionally, the passage in Bensimon et al. that applicant recited, i.e. ***“These highly specific surfaces for biological reactions, contain a support having at the surface groups with a double bond, especially vinyl (-CH=CH<sub>2</sub>, hereinafter C=C surfaces) which are accessible to the solution. They are capable of directly anchoring molecules of biological interest (DNA, RNA, PNA, proteins, lipids, saccharides) under certain conditions of pH or ionic content of the medium. In particular, these surfaces do not require specific chemical modification either of the surface or of the biological molecules to be anchored. There are no documents mentioning such a use of a surface with vinyl groups.”*** is not found in col. 3, lines 40 to 50 as indicated by applicant but rather it is found in col. 4, lines 12-22. Therefore, it is unclear as to applicant's assertion that the examiner miss read the teaching of Bensimon et al. when applicant recount passages that does not match with the passages that the examiner relate to, i.e. col. 4, lines 15-18, and col. 7, lines 26-32.

Second, the presently claimed step of ***“converting said olefin functional groups to ligand reactive functional groups that produce covalent bonds with said at least two different polymer ligands upon contact with said ligands”*** of claim 7 does not impart any structural characteristic of an “intermediate” moiety but rather a functional characteristic of the claimed olefin functional group, i.e. a ***“ligand reactive functional groups that produce covalent bonds with”*** the ligand. Thus, in response to applicant's argument that the references fail to show certain features of



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applicant's invention, it is noted that the features upon which applicant relies (i.e., an "intermediate" moiety) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Third, Bensimon et al. do teach the presently claimed converting step. Bensimon et al. discloses the step of controlling the reactivity of the C=C surface by pH or ionic contents, i.e. "*converting said olefin functional groups to ligand reactive functional groups*", to directly anchor the biological interest such as DNA, i.e. to "*produce covalent bonds*" (see col. 4, lines 15-18, and col. 7, lines 26-32). Thus, Bensimon et al. do teach the presently claimed converting step.

Fourth, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the teaching of Wang et al. and Bensimon et al. is found in the reference of Bensimon et al., i.e. for the advantage of providing a surface having a reactivity that is highly pH-dependent (Bensimon: col. 6, lines 50-56). Second, there is expectation of success of the combination since the method of Bensimon et al. disclose the success of the anchoring the biological interest such as DNA on a double bond surface 9see col.

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14, line 8 to col. 15, line 22). Thus, there is a motivation to combine the teaching of Wang et al. and Bensimon et al.

Therefore, the method combination of Pirrung et al. and Bensimon et al. is obvious over the presently claimed method, and the rejection is maintained.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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February 23, 2005